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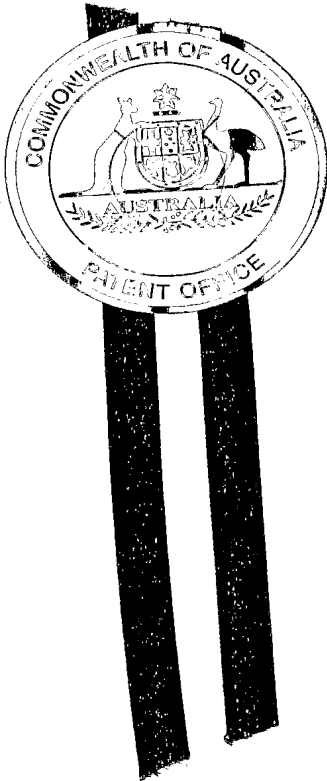


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I, JANENE PEISKER, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004901396 for a patent by FRANK DANIEL LOTRIONTE as filed on 18 March 2004.



WITNESS my hand this  
Fourteenth day of April 2005

A handwritten signature in cursive script, appearing to read 'J. Peisker'.

JANENE PEISKER  
TEAM LEADER EXAMINATION  
SUPPORT AND SALES

AUSTRALIA  
Patents act 1990

COMPLETE SPECIFICATION  
PROVISIONAL PATENT

WIND MILL IMPELLOR

Technical Category : Mechanical, Electrical and electronics.

THE INVENTION IS DESCRIBED IN THE FOLLOWING STATEMENT :

## IMPROVED WINDMILL IMPELLOR

Technical Category : Mechanical.

This invention aims at supplying the drive torque necessary for various applications including water pumping , ventilation , etc. from a reduced product size and / or available wind speed with a specially designed impellor that maximisers the conversion of airflow around and though it to available torque, by means of concentrating most of the work done ( where it is of maximum efficiency ) at its circumference , as well as using the surrounding air flow to create a reduced pressure inside , which effectively increases the airspeed of wind travelling directly through the remainder of the impellor blades.

### DESCRIPTION

A number of curved section , longitudally orientated " vanes" # 1 with a slight longitudinal twist or helix increasing toward the rotation direction # 2 ,all rotatably aligned parallel to the inward wind direction fixed to the outer " windward " ends of an equal number of outwardly projecting blades containing a slight increasing surface curvature in both their outer horizontal and vertical planes # 3 thus permitting full co - joining at their respective junctions, see Figure 1 , are centrally connected and radially displaced around a central hub or shaft. # 4  
An annular " rim" # 5 being of slight thickness , with a curved forward outer edge is attached to the forwardmost outer edge of the " vanes" described in Figure 1. and provides additional rigidity to as well as deflecting surrounding air flow away and around , the vanes #1 , and along with the inclusion of a connection to a drive shaft or generator , completes the impellor.

The impellor is constucted in such a way to allow cavity mouldability in rigid plastics , forming in sheetmetal or aluminium, either as one complete unit or to be assembled in sections by bolting, rivets, welding , encased moulding or similar.

## IMPROVED WINDMILL IMPELLOR

Technical Category : Mechanical, Electrical and electronics.

This invention aims at supplying the drive torque necessary for various applications including water bore pumping, power generation etc. from a reduced product size and / or available wind speed with a specially designed impellor that maximizers the conversion of airflow around and though it to available torque, by means of concentrating most of the work done ( where it is of maximum efficiency ) at its circumference, as well as using the surrounding air flow to create a reduced pressure inside, which effectively increases the airspeed of wind travelling directly through the remainder of the impellor blades.

### DESCRIPTION

A number of curved section, longitudinally orientated " vanes" # 1 with a slight longitudinal twist or helix increasing toward the rotation direction # 2, all rotatably aligned parallel to the inward wind direction fixed to the outer " windward " ends of an equal number of outwardly projecting blades containing a slight increasing surface curvature in both their outer horizontal and vertical planes # 3 thus permitting full co - joining at their respective junctions, see Figure 1, are centrally connected and radially displaced around a central hub or shaft. # 4  
A short annular " rim" # 5 being of slight thickness, with a curved forward outer edge is attached to the forwardmost outer edge of the " vanes" described in Figure 1. and provides additional rigidity to as well as deflecting surrounding air flow away and around, the vanes #1, and along with the inclusion of a connection to a drive shaft or generator, completes the impellor.

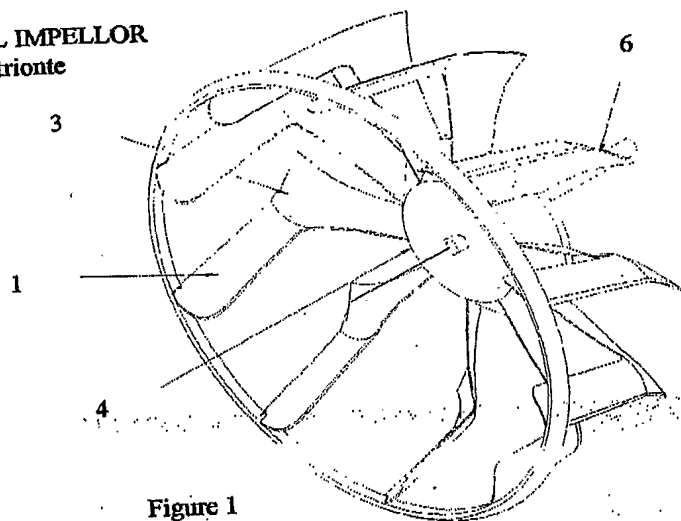
The impellor is constructed in such a way to allow cavity mouldability or forming in sheetmetal or aluminium, either as one complete unit or to be assembled in sections by bolting, rivets, welding encased moulding or similar.

**ABSTRACT :**

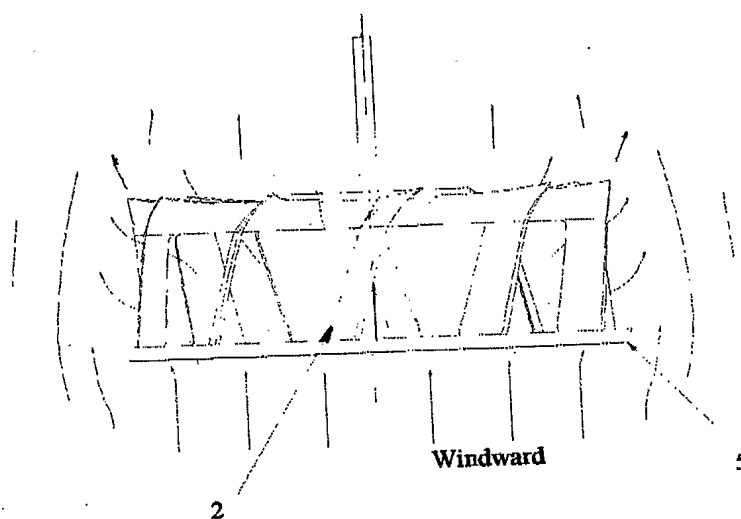
This invention essentially comprises of an impellor that is a conjunction / co-operation of 2 differing types of air flow devices ( fans ) and consists of a number of individual outwardly projecting thin , slightly curved surfaces ( blades ) inclined to act in reaction to the air flow ,that have at their respective outer, most frontward , ( windward ) edges , a typically curved section substancially forward projecting extension of substancial length twisted or slanted in a slight helix angle similar but slightly less than the inclination angle of the blades they are joined to , all being radially displaced and attached to a central hub rotating perpendicular to the windward direction.

The complete unit can be mounted on a mast , enclosure or structure with self -orienting ability to windward and may contain a method of limiting airflow if an unusually fast wind speed occurs during a gale etc. or when maximum power output occurs.

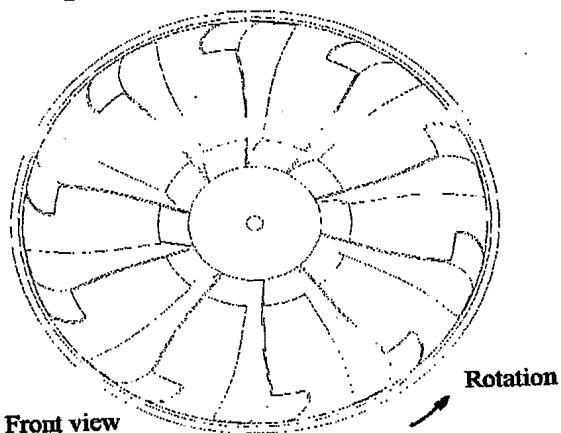
**WINDMILL IMPELLOR**  
**Frank D Lotrionte**  
**14-3 2004**



**Figure 1**



**Figure 2 -Top view**



**Figure 3 - Front view**